*Advanced Light Source*

# QUICK FACTS

## The ALS Site

The original building, completed in 1942, was designed by Arthur Brown Jr. (designer of Coit Tower in San Francisco) to house Berkeley Lab's namesake E.O. Lawrence's 184-inch cyclotron, an advanced version of the first cyclotron he invented and for which he received the Nobel Prize in Physics in 1939.

## Funding Agency: U.S. Department of Energy, Office of Basic Energy Sciences

**ALS Construction Costs:** $99.5 million
**Planning Started:** 1987
**Construction Completed:** March, 1993
**Facility Dedicated:** October 22, 1993

## Total ALS Staff: ~175 Visiting Researchers: 650 per year and growing

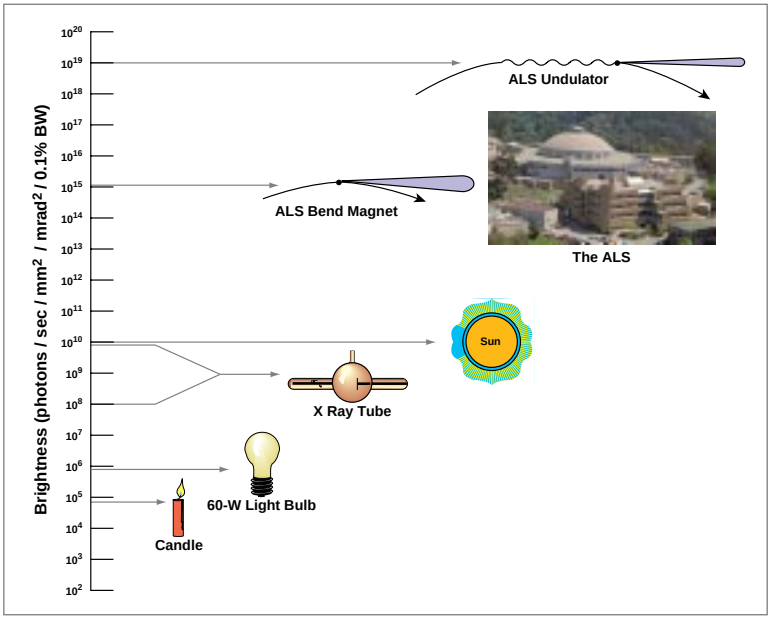
## How the ALS Works

Electrons travelling nearly the speed of light, when forced into a circular path by magnets, emit bright ultraviolet and x-ray light that is directed down beamlines to experiment endstations.

**Nature of Particles in the Storage Ring:** Electrons with a nominal energy of 1.9 GeV
**Size of Electron Beam:** ~0.20 mm × 0.02 mm (about the width of a human hair)
**Operating Beamlines:** 29 plus the Beam Test Facility
**Possible Beamlines:** ~80

## How Bright Is It?

The Advanced Light Source (ALS) produces light in the x-ray region of the electromagnetic spectrum that is one billion times brighter than the sun. This extraordinary tool offers unprecedented opportunities for state-of-the-art research in materials science, biology, chemistry, physics, and the environmental sciences. Ongoing research topics include the electronic structure of matter, semiconductors, crystallography, polymers, malaria, ozone photochemistry, and optics testing.




For additional information about the ALS, visit our Web page at: **www-als.lbl.gov**

Or explore the world of matter with us at: **www.lbl.gov/Microworlds/**

Or contact Berkeley Lab's Office of Public Affairs: **510·486·5771**